

Coding Method with Dynamic Positioning

Background of the Invention

1. Field of The invention

5 The present invention is to provide a coding method with dynamic positioning. More particularly, the dynamic positioning coding method is used in the grain pick-up process. By using the dynamic positioning coding method provided in the present invention, it can effectively pick up
10 the grain from wafer then put it to the bin.

2. Description of the Prior Art

 In the traditional grain pick-up process, it first clarifies the exclusive bin for each grade of the grain. Then, it picks up all
15 the grains from one wafer into the exclusive bin of the each grade. Each grain herein is with multiple semiconductor circuit components, and the wafer has the rectangular array of the multiple-grain arrangement.

 Please referring to Figure 1, it is a prior art showing a
20 grain pick-up process. One of the grains 1 is picked up from the fixed place of the wafer 2. The pick-up method can remove the grain from the wafer 2 through the pick-up apparatus 3. The pick-up apparatus can be a robotic arm, and the wafer 2 can be supported by the wafer base. By the
25 position from rotating the wafer base, the relative movement between the robotic arm and the wafer base leads the grain

being picked from the wafer, and then, the wafer is moved to the exclusive bin 4 of the grain. This kind of conventional grain pick-up method can easily remove the wafer into the right position particularly for the large-size wafer. According to the fast change of the technique development, the size of the wafer becomes larger, but the grain becomes more and denser. Therefore, the distribution range in different grades of the grains is broader. The traditional design with robotic arm trying to rotate the wafer and put the grain in the right position becomes more complicated and more difficult. This has a restriction on the equipment, and the accuracy of the gain pick-up process faces the problem.

More, please referring to Figure 2. It is a prior art showing the flow chart of the grain pick-up process. By using the conventional technique to pick up the wafer, firstly it tests all the grain sorts on the wafer 501, then, it clarifies the sorts into multiple consequent grades. For example, they are from the first grade to the twelfth grade. Further, it assigns the N-th bin as the exclusive bin for the grain of the N-th grade 502. For example, the first bin is for the first grade of the grain. Then, the wafer is rotated and it leads the grain of the N-th grade to position on the down side 503 of the pick-up apparatus. More, it picks up the grain of the N-th grade, and then puts it into the exclusive bin 504 for the grain of the N-th grade. Finally, it can determine if the grains have been picked up completely 505. If all the grains are picked up

completely, it implements the grain pick-up process. However, if it is not completed, the grain pick-up process will be continuous to perform until finishing all the grain pick-up. While the grades of the grains in the wafer are with a broad
5 distribution range, the large movement range in the pick-up apparatus occurs as well as other problem happens. More, some un-reaching dead angles will happen.

According to the above description, the present invention is to provide a coding method with dynamic positioning. It can
10 effectively improve the grain pick-up process. By using the dynamic positioning coding method, it firstly picks up one of any grains, and tests it as well as defines it as a grade for the grain. Then, it puts the grain to a bin, and defines the bin as the exclusive bin for the grade of the grain in the same
15 time. Then, it continues to pick up the grain until all the grains are in their exclusive bins. It does not arrange the exclusive bin in advance, but only defines the exclusive bins for the actual grain grade distribution. This can fast complete the grain pick-up process thereto shorten the movement
20 distance of the grain pick-up process. Further, it can effectively overcome the problem of large movement distance in the pick-up apparatus as well as more complicated problems. The process of the grain pick-up can be accurate and more efficient.

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Summary of the Invention

The present invention is mainly to provide a coding method with dynamic positioning. More particularly, it is used in a grain pick-up process. The dynamic positioning coding method does not arrange the exclusive bin in advance, but
5 only defines the exclusive bins for the actual grain grade distribution. This can fast complete the grain pick-up process. Further, it can shorten the movement distance of the pick-up apparatus. More, it can effectively solve the problem of the large movement as well as other complicated problems.
10 Therefore, the grain pick-up process can be more accuracy and more efficiency.

For a more complete understanding of the present invention and for further advantages thereof, reference is now made to the following description taken in conjunction
15 with the accompanying drawing, in which:

Brief Description of the Drawings

Figure 1 is a conventional grain pick-up graph;

Figure 2 is one conventional grain pick-up flow chart; and

20 Figure 3 is one of the preferred embodiments according to the present invention showing the flow chart of the dynamic positioning coding method for sorting grains.

Detailed Description of the Preferred Embodiments

25 The present invention is to provide a coding method with dynamic positioning. More particularly, the dynamic

positioning coding method is used in the grain pick-up process. It uses the grain pick-up step of the dynamic positioning coding method to pick up one of the gains, and then tests the grain. According to the result of the grain testing, it clarifies the grade for the grain. More, it puts the grain to one of the bins. In the meantime, the bin is clarified as an exclusive bin for the grade of the grain. Further, it continues the complete the pick-up process until all the grains are in their exclusive bins. The present invention only defines the exclusive bins for the actual grain grade distribution thereto fast completes the grain pick-up process. This can shorten the movement distance of the pick-up apparatus. More, it can effectively solve the problem of the large movement as well as other complicated problems. Therefore, the grain pick-up process can be more accuracy and more efficiency.

For further description, please referring to Figure 3. It is one of the preferred embodiments according to the present invention showing the flow chart of the dynamic positioning coding method for sorting grains. The dynamic positioning coding method according to the present invention is used in the grain pick-up process. It first picks up the N-th grain in the step by using a pick-up apparatus to perform the pick-up motion, The pick-up apparatus can be a robotic arm. Apart from this, it tests the grade for the N-th grain. The method for testing the grain can be a yield test. The result of

the yield test can recognize the condition of the defect in the grain covering with semiconductor thereto treat it as a classification standard. By this standard, the grains can be divided into multiple grades. The expression for the grade
5 can be a natural number, an integral or a defect percentage. Then, it determines if the grade of the grain has its exclusive bin 603. If there is an exclusive bin, it puts the N-th grain into the N-th exclusive bin of the grade 604. If there is no exclusive bin, then, it picks the M-th bin and defines it as an
10 exclusive bin for the N-th grain or the grain with the same grade 605. M here is a natural number. Further, the pick-up apparatus goes back and check if there is any grain un-picked 606. If there is no grain unpicked, then, it completes the pick-up process 607. If there is still a grain
15 unpicked, then, it repeats the steps 601-606 for further the pick-up process.

For example, first it picks up the first grain 601, and tests the first grain as the first grade 602. If the tested grade is the first grade, it has to determine if the grade of the grain has
20 its exclusive bin 603 for the first exclusive bin. If so, the first grain is put into the first exclusive bin 604. If not, then, the first bin is picked up and is defined as the exclusive bin 605 for the grade of the grain. Further, it determines if there is any grain there 606. If there is still one, it goes back to the
25 first step for picking up the N-th grain until finishing all the grain pick-up. According to the above description, the present

invention is to provide a dynamic positioning coding method. It does not arrange the exclusive bin in advance, but only defines the exclusive bins for the actual grain grade distribution. This can fast complete the grain pick-up process thereto shorten the movement distance of the grain pick-up process. Further, it can effectively overcome the problem of large movement distance in the pick-up apparatus as well as more complicated problems. The process of the grain pick-up can be accurate and more efficient.

10 In conclusion, the present invention meets novelty, improvement, and is applicable to the industry. It therefore meets the essential elements in patentability. There is no doubt that the present invention is legal to apply to the patent, and indeed we hope that this application can be granted as a
15 patent.

Although the present invention has been described in detail with respect to alternate embodiments, various changes and modifications may be suggested to one skilled in the art, and it should be understood that various changes, suggestions, and alternations can be made hereto without
20 departing from the spirit and scope of the invention as defined by the appended claims.